Setting Priorities in the Southern Rocky Mountains:

Ecoregional Assessment & Conservation Blueprint

Partners:

BLM, CO Division of Wildlife, USFS

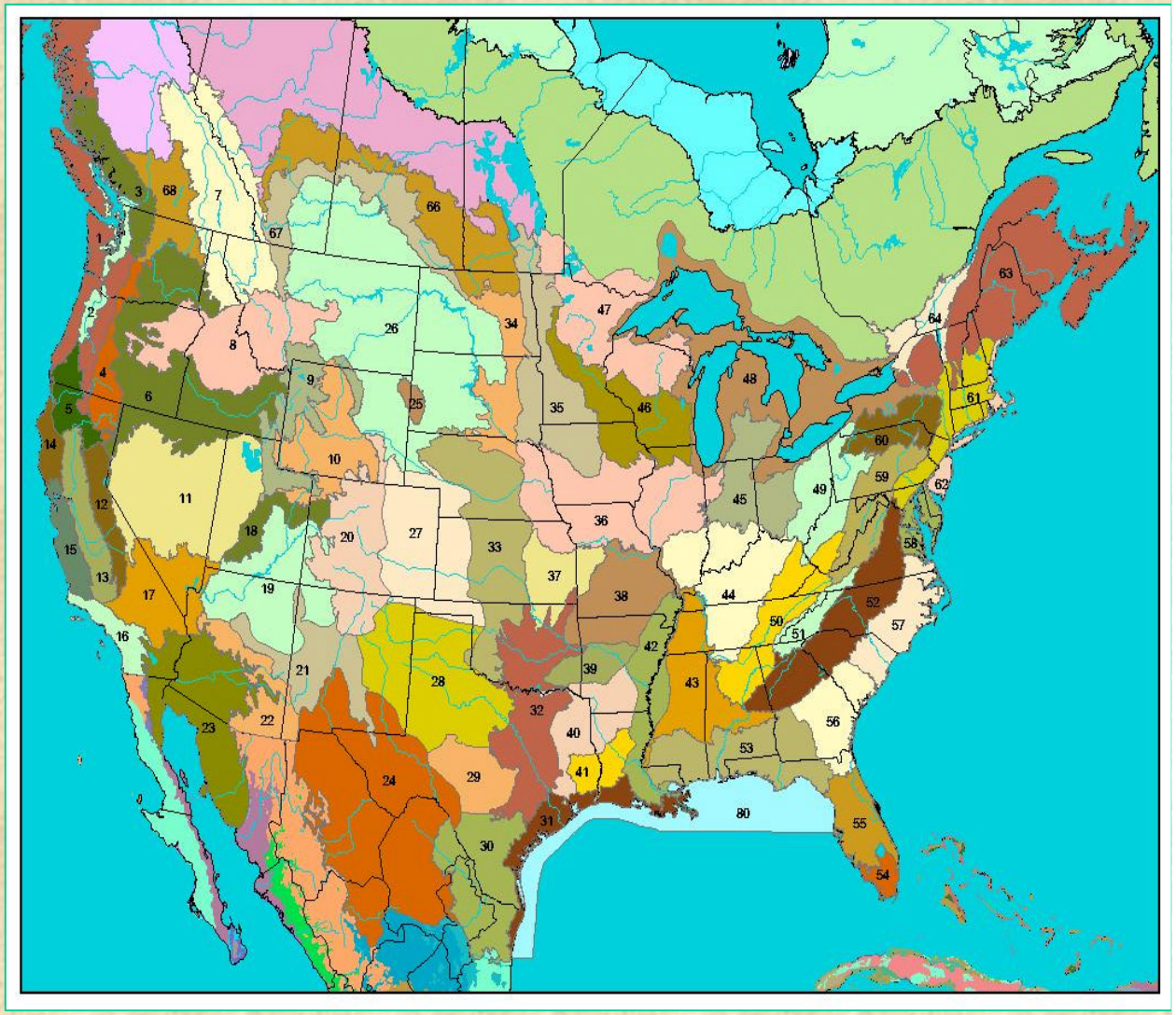
CO State University, University of CO

CO, NM, WY Natural Heritage Programs

Conservation by Design

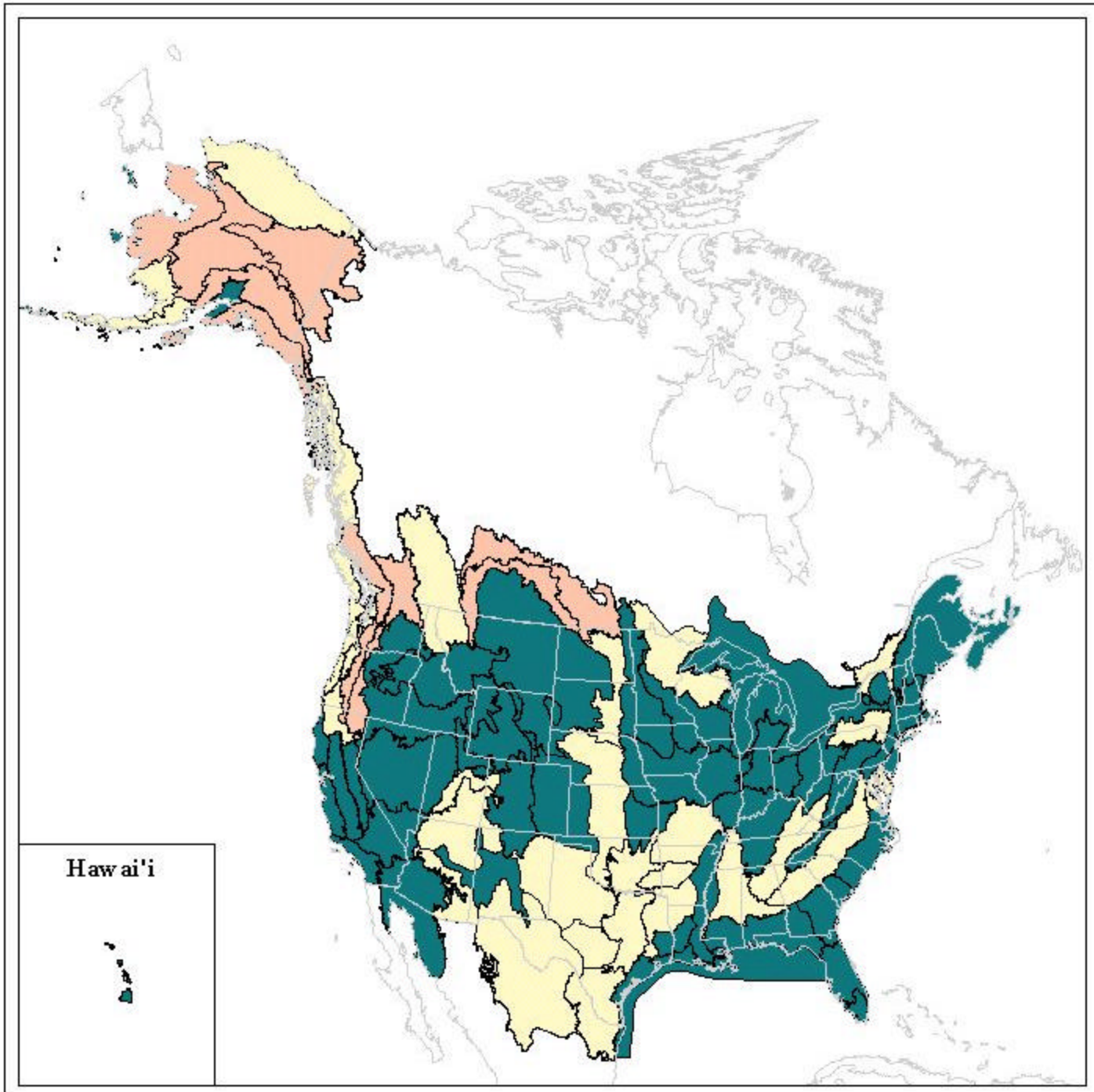
Ecoregions

Framework for capturing variation in biodiversity across environmental gradients



Large areas of land and water delineated by climate, vegetation & geology (Bailey)

Status of Ecoregional Planning in the US and Canada



Status of Planning

- 1st iteration completed
- In progress
- Not yet started

The Nature Conservancy®

Saving the Last Great Places

Map Created By:
The Nature Conservancy,
Midwest Conservation Science Center

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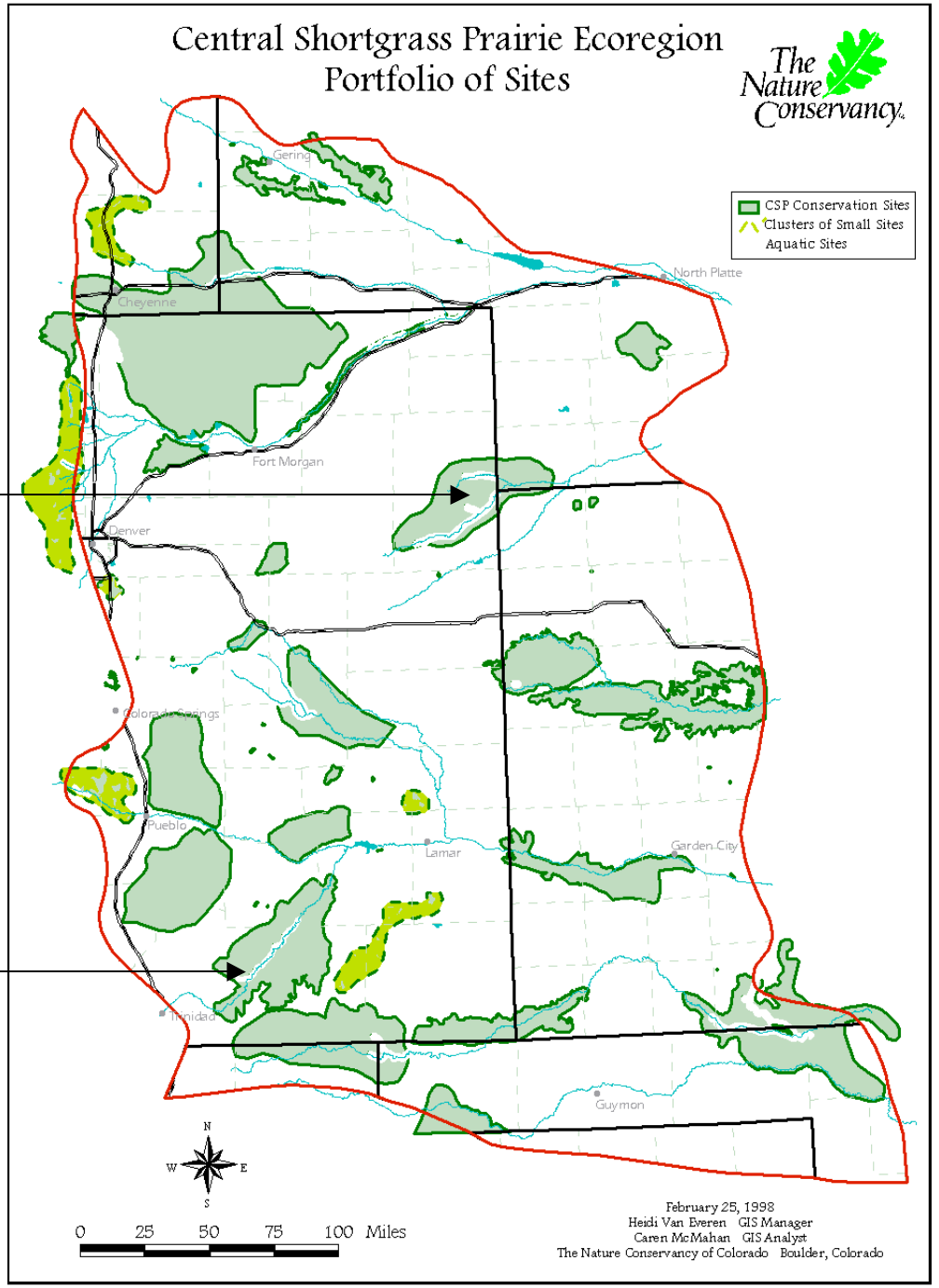
Central Shortgrass Prairie

Arickaree River

Purgatoire River



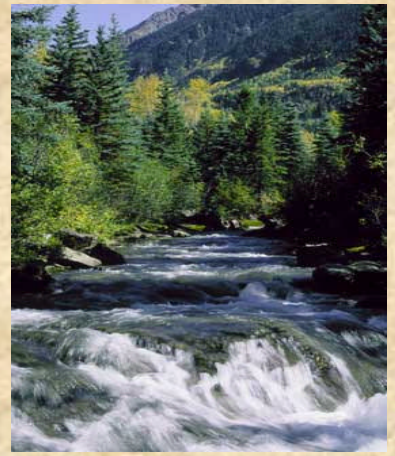
Southern Rocky Mountains

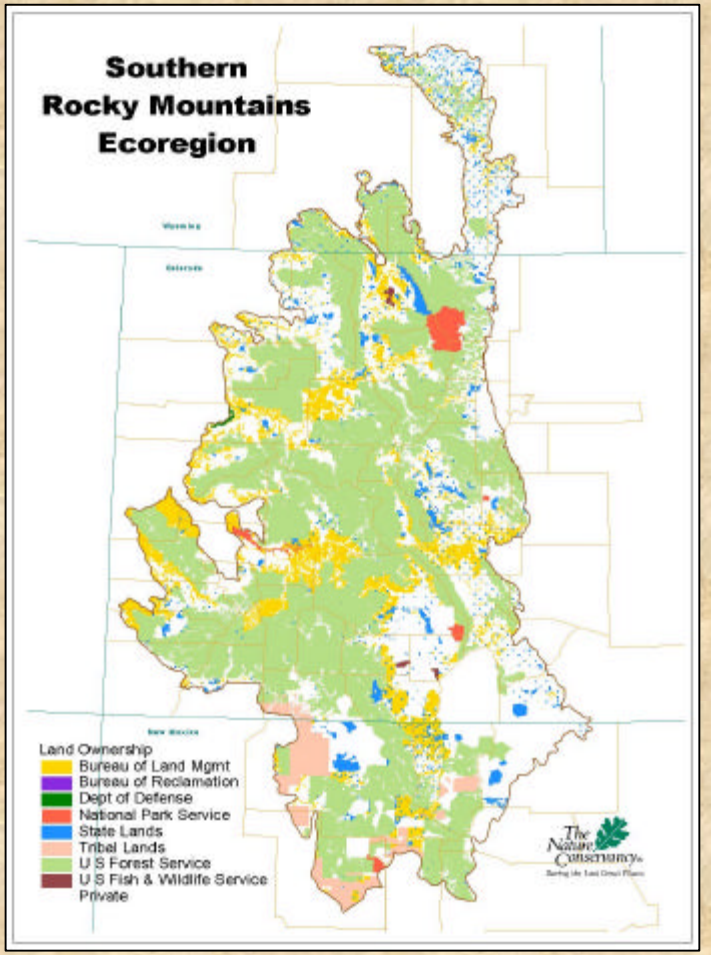
One of the fastest growing regions in US (31% growth rate)

65% public land

Highest ecoregion in US

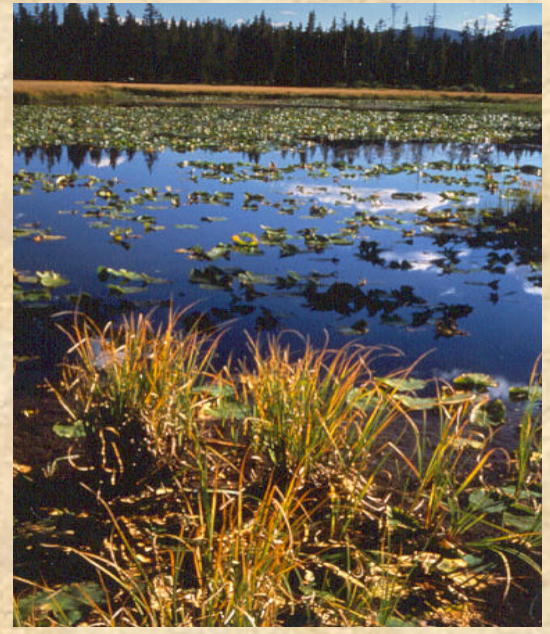
Headwaters for 3 major rivers in North America





Goal

Design a portfolio (network) of conservation areas that, with proper management, would ensure the long-term survival of the species, communities, and ecological systems of the Southern Rocky Mountains



Ecoregional Steps

1. Select conservation targets
2. Set conservation goals
3. Assess viability/integrity
4. Select areas and design portfolio
5. Identify threats and strategies

Coarse-filter/Fine-filter Approach

Conserving multiple viable examples of systems & communities will conserve majority of species

Certain species require individual attention b/c ecosystem approach can't capture them

Ecological Systems:

groups of communities linked by ecological processes

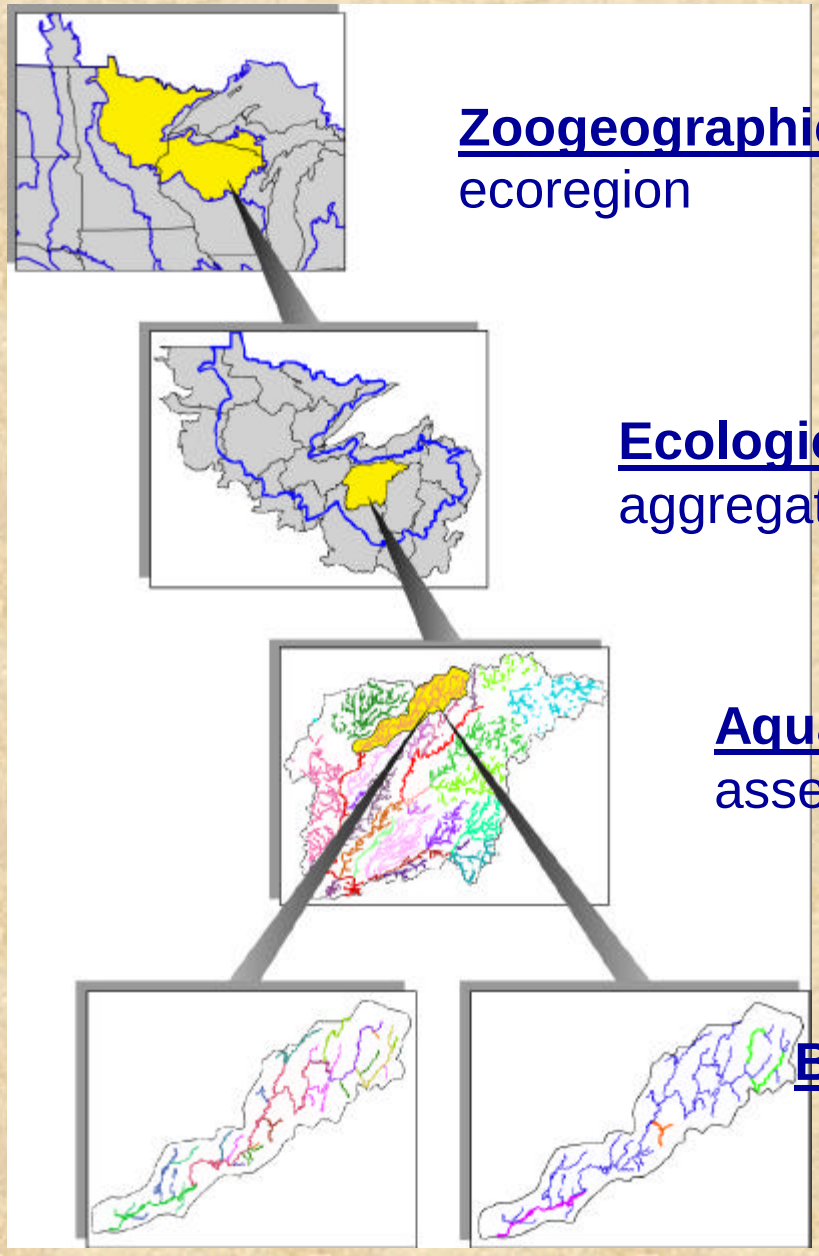
Aquatic Systems

Montane/moderate-low gradient/headwater creeks/sandstones

Terrestrial Systems

Aspen Forests

Aquatic Classification Framework



Zoogeographic subregion
ecoregion

Ecological Drainage Unit
aggregation of watersheds

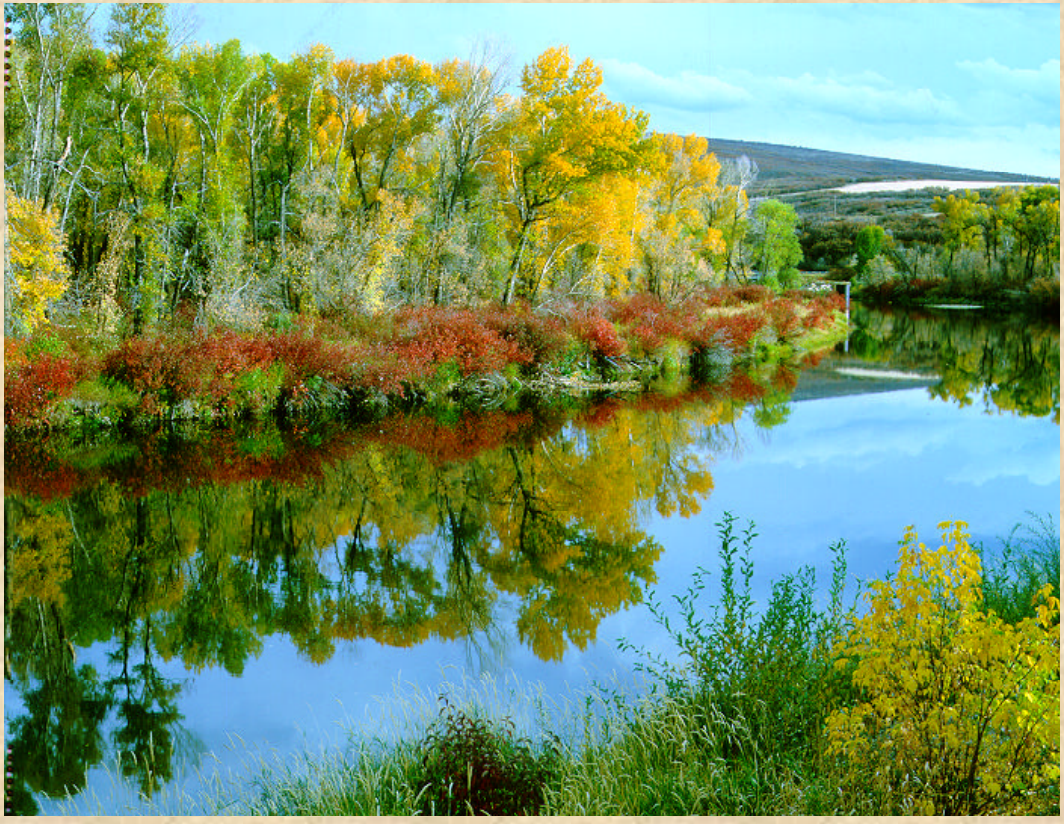
Aquatic systems
assemblage of communities

Biological communities

Macrohabitats
segments of streams & lakes

79 Rare or Imperiled Plant Communities

Similar floristic composition, vegetative structure & habitat conditions



Box Elder-Narrowleaf Cottonwood/Red-Osier Dogwood

383 Species

Federally listed

Endemic

Wide-ranging

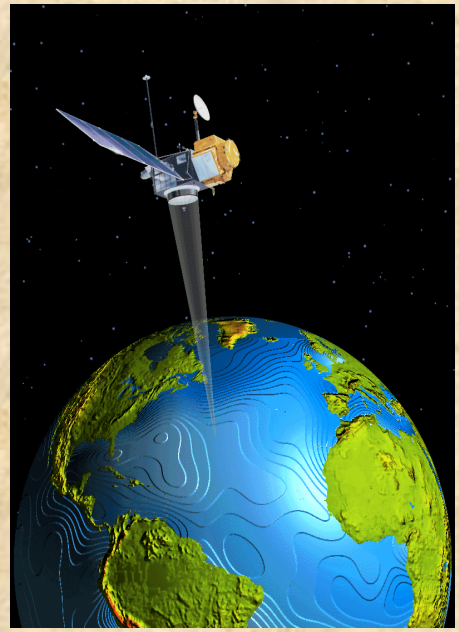
Declining

Disjunct

Imperiled

Sources of Information

- Natural Heritage Programs
- Natural Diversity Information Source
- Partners in Flight
- U.S. GAP Analysis Programs
- Remote Sensing
- Expert Workshops



Conservation Goals

How much is enough?

Set goals in terms of number and distribution of targets

- Globally rare species: all viable & restorable occurrences, up to 25 (3/section)
- Ecological systems: 30% of historic extent (2/section)

Viability/Integrity Assessment

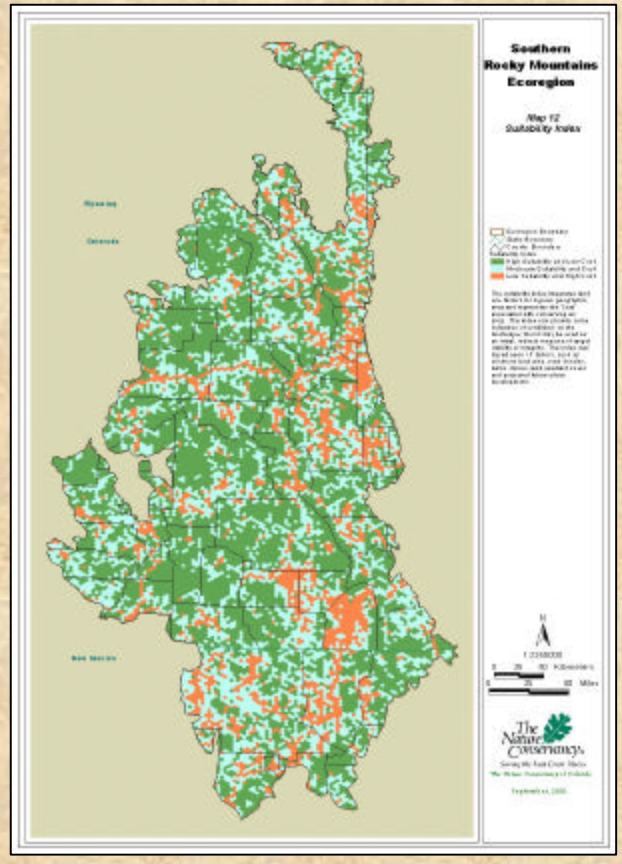
Is this a viable population?

Does this system have high integrity?

- Viability guidelines for species and systems
- Expert review
- Identified viable occurrences

Suitability Index

Integrates land use factors representing indirect measure of viability/integrity *or* "cost" of conserving an area



- Dams
- Fire Fuel Conditions
- Land Use/Land Cover
- Mines
- Projected Urban Growth
- Road Density

Design of the Portfolio

- SITES spatial optimization software program
- Model selected areas that most efficiently met goals -- i.e., least area at lowest cost
- Refined by experts

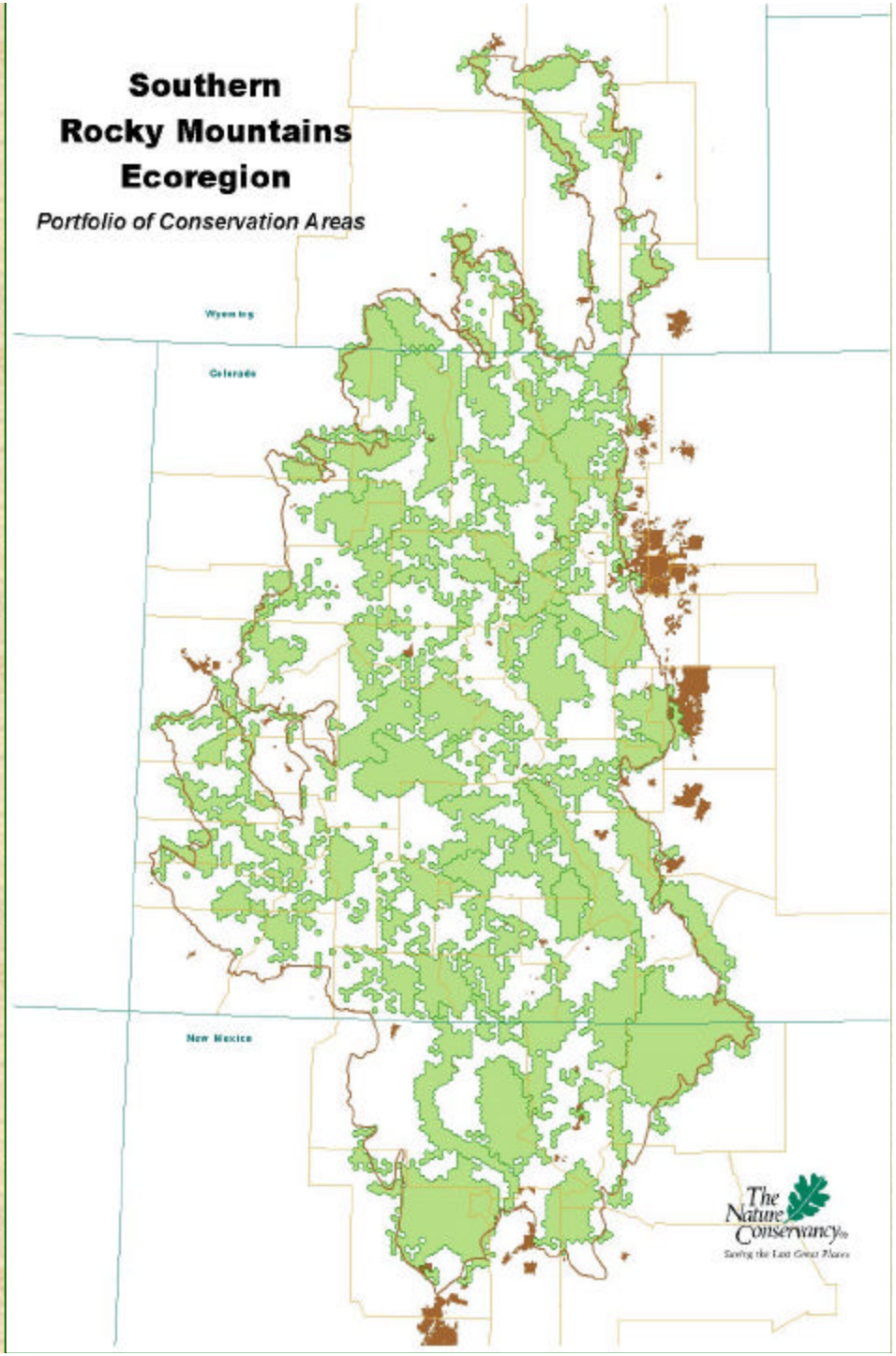
Conservation Blueprint

Important places to conserve that must remain intact or be restored

Starting point for designing strategies to address threats

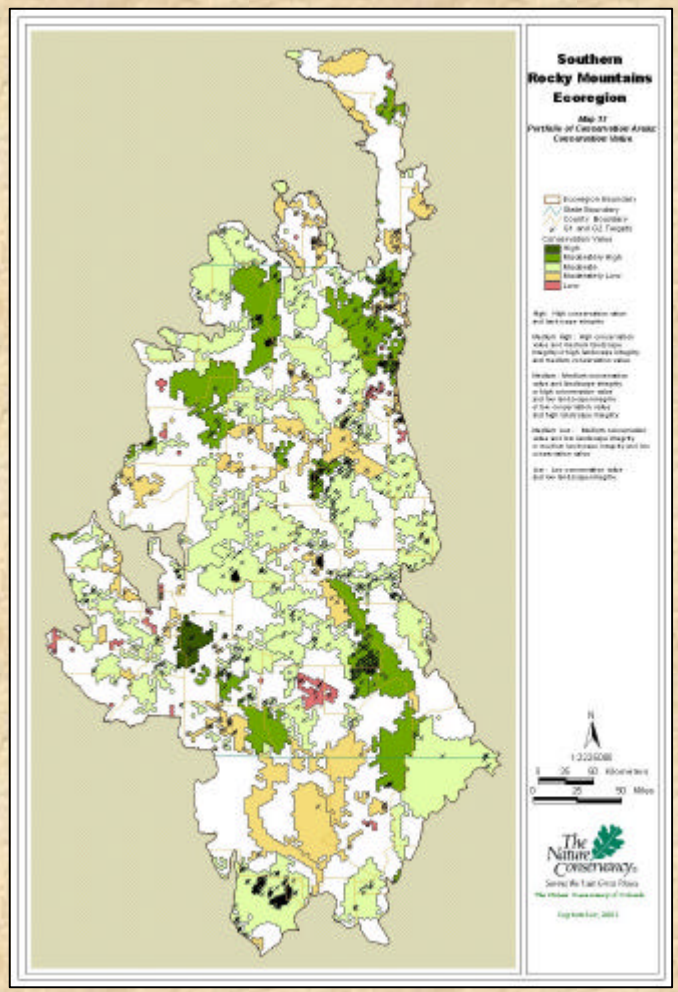
188 areas
65% public

Met goals for >90% systems, not all species



1. Conservation Value

Identified irreplaceable areas based on # of imperiled targets & landscape integrity



Green = highest conservation value

2. Priority Threats

Incompatible Development

Invasive Species

Incompatible Fire Management Practices

Roads

Mining/Oil & Gas Dev.

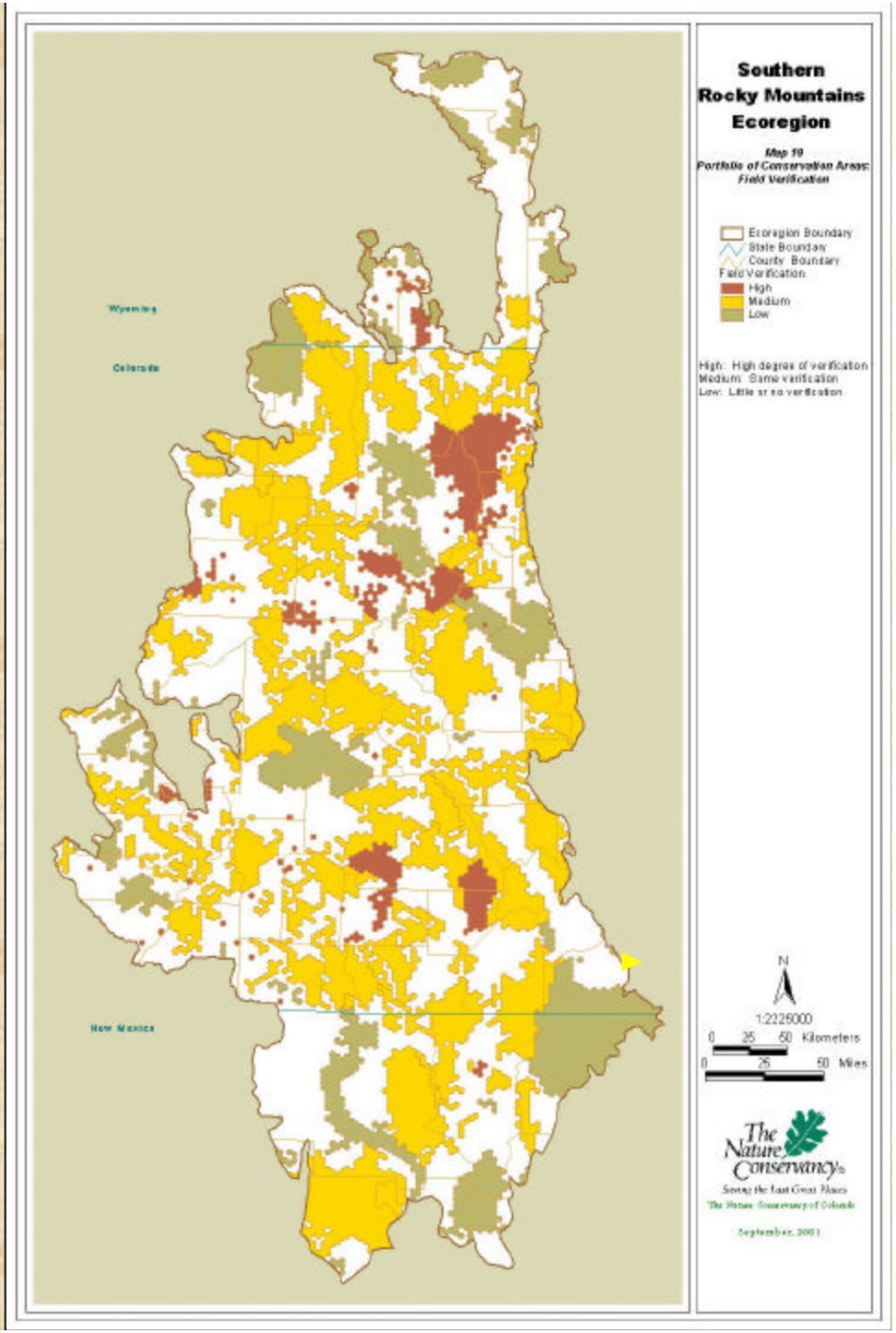
Whirling Disease & Hydrologic Alterations

3. Field Verification

Level of field inventory

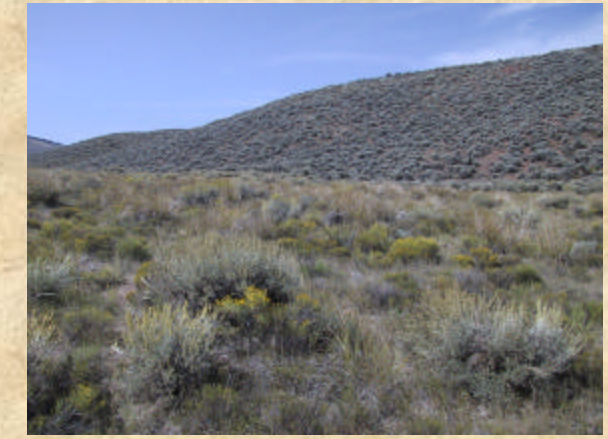
Red = well inventoried & ready for conservation plans/action

Tan = need extensive field inventory



The Challenge

*Need efficient and effective means to develop strategies to capture **ALL** ecoregional targets and abate critical threats within and across ecoregions.*



Target-Based Approach

Threat-Based Approach

Five-S Framework to Develop Multi-Scale Strategies

- Systems
- Stresses
- Sources of stress
- Strategies
- Success measures

Potential Uses by Partners

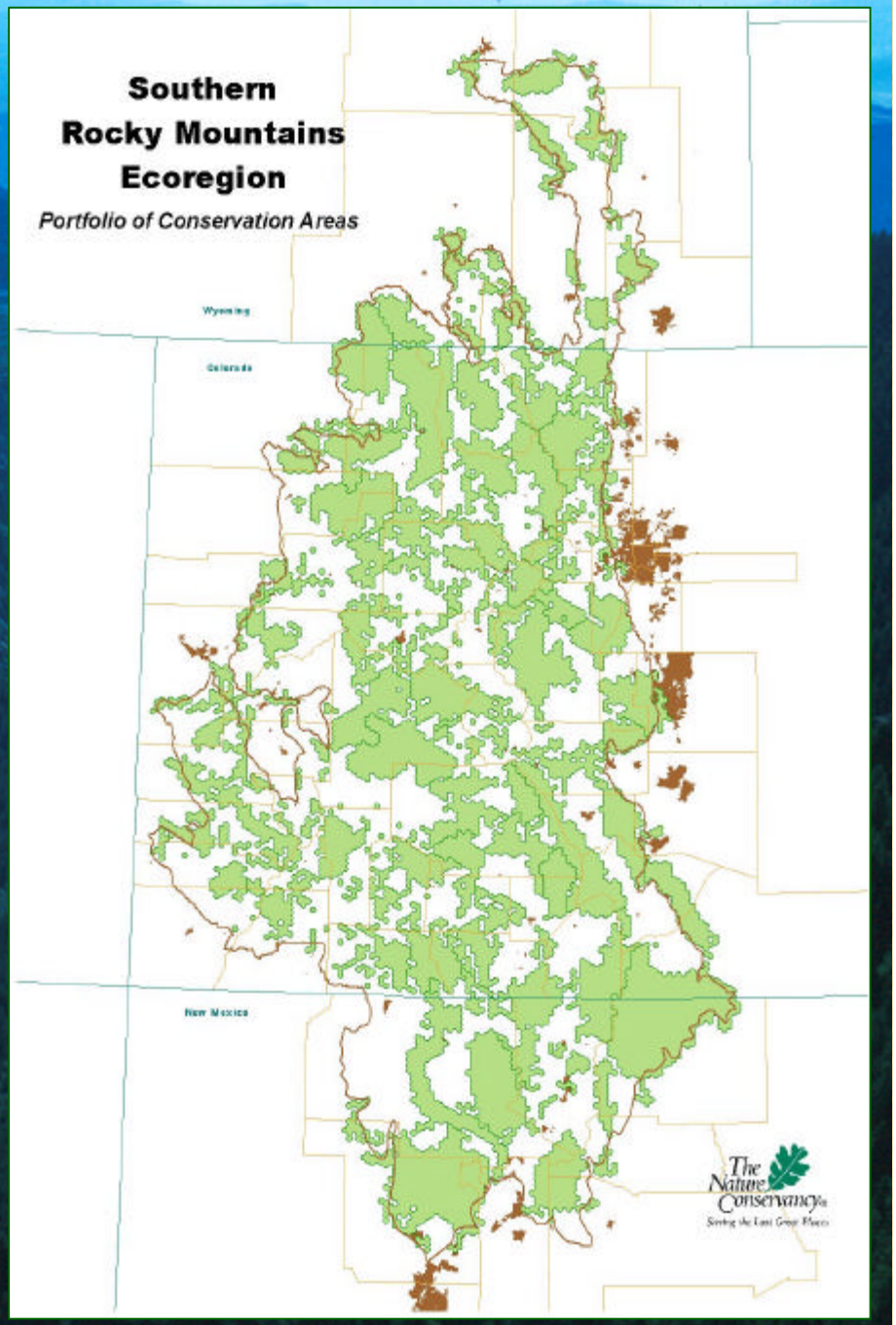
- Inform & provide data for:
  - Land use plans/assessments
  - Setting conservation priorities
  - Fire management planning

- Guide inventory, research, & restoration activities

- Inform policies & protection efforts

Conservation Blueprint

- Comprehensive science-based process
- Inform land use & management decisions for conservation community
- Expand partnerships to address threats, fill data gaps, & refine assessment



http:www.conserveonline.org